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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 971,953	10.05.2001	Paul S. Andry	JP9-2000-0187US1 (8728-42)	4099

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EXAMINER

MALDONADO, JULIO J

ART UNIT PAPER NUMBER

2823

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/971,953

Applicant(s)

ANDRY ET AL.

Examiner

Julio J. Maldonado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15-17 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-17 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's cancellation to claims 14 and 18-21 is acknowledged. Claim 22 is newly added. Thus, claims 1-13, 15-17 and 22 are pending in this application.
2. The non-final rejection as set forth in paper No. 7 is withdrawn in response to applicants' amendments.
3. A new rejection is made as set forth in this Office Action.

Allowable Subject Matter

4. The indicated allowability of claims 1-13 and 15-17 is withdrawn in view of the newly discovered reference(s) to Calvert et al. (U.S. 6,348,240 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4-7, 9-17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calvert et al. (U.S. 6,348,240 B1) in view of the applicants' admitted prior art.

In reference to claims 1, 2, 4, 6, 9-17 and 22, Calvert et al. (Fig.1) in a related method to selectively deposit a conductive layer teach providing a substrate (column 7, lines 17 – 20); forming a non-functional insulation layer on a substrate, wherein said layer is a diamond layer (column 7, lines 17 – 20); forming a functional insulation layer

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on the non-functional insulation layer, the insulation layer having predetermined functional groups comprising OH functional groups (column 5, lines 15 – 34); etching the functional insulation layer in accordance with the patterns of a patterned mask to create a patterned insulation layer (column 6, lines 5 – 22); treating the patterned insulation layer with a silane coupling agent reacting with the predetermined functional groups (column 5, lines 42 – 65); treating the patterned insulation layer with a catalyst-containing solution, wherein said catalyst containing solution includes palladium dichloride (column 6, lines 23 – 34); and depositing electrically conductive material on the patterned insulation layer (column 5, line 15 – column 7, line 40), wherein the electrically conductive material comprises gold (Au) (column 2, lines 16 – 19).

Calvert et al. fail to teach forming a patterned polymer layer by photolithography having patterns on the functional insulation layer; and stripping the patterned polymer layer to expose the patterned insulation layer. However, the admitted prior art (Figs. 1a-h) teaches the steps of providing a substrate (103); forming an insulation layer (101) on the substrate (103); forming a patterned polymer layer (109) by photolithography having the patterns on the insulation layer (101); etching the insulation layer (101) in accordance with the patterns of the patterned polymer layer (109) to create a patterned insulation layer; and stripping the patterned polymer layer (109) to expose the patterned insulation layer (page 1, line 10 – page 3, line 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the patterned polymer layer as taught in the prior art to pattern the functional insulation layer in the selective deposition process of Calvert et al., since this process involves

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conventional processes in the formation of patterns using photolithography (page 1, lines 16 – 17).

In reference to claims 5 and 7, the combined teachings of Calvert et al. and the prior art substantially teach all aspects of the invention but fail to teach the insulation layer having a thickness between about 1 nm and about 10 nm; and the patterned polymer layer having a thickness between about 50 nm and 100 nm. Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions because applicant has not disclosed that the dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Calvert et al. (U.S. 6,348,240 B1) in view of the prior art as applied to claims 1, 2, 4-7, 9-17 and 22 above, and further in view of Schnur et al. (U.S. 5,079,600).

The combined teachings of Calvert et al. and the prior art teach that the functional insulating layer is an oxide but fail to teach that said oxide is a silicon oxide. However, Schnur et al. (Figs.1-5) teach a selective deposition process including selectively depositing a metal over a functional layer, wherein the functional layer includes silicon oxide (column 8, lines 27 – 41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the process of Schnur et al. to enable the formation of the functional layer of Calvert et al.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Calvert et al. (U.S. 6,348,240 B1) in view of the prior art and Nagura (U.S. 5,841,856).

In reference to claims 1, 2, 4, 6, 9-17 and 22, Calvert et al. (Fig.1) in a related method to selectively deposit a conductive layer teach providing a substrate (column 7, lines 17 – 20); forming a non-functional insulation layer on a substrate, wherein said layer is a diamond layer (column 7, lines 17 – 20); forming a functional insulation layer on the non-functional insulation layer, the insulation layer having predetermined functional groups comprising OH functional groups (column 5, lines 15 – 34); etching the functional insulation layer in accordance with the patterns of a patterned mask to create a patterned insulation layer (column 6, lines 5 – 22); treating the patterned insulation layer with a silane coupling agent reacting with the predetermined functional groups (column 5, lines 42 – 65); treating the patterned insulation layer with a catalyst-containing solution, wherein said catalyst containing solution includes palladium dichloride (column 6, lines 23 – 34); and depositing electrically conductive material on

the patterned insulation layer (column 5, line 15 – column 7, line 40), wherein the electrically conductive material comprises gold (Au) (column 2, lines 16 – 19).

Calvert et al. fail to teach forming a patterned polymer layer by photolithography having patterns on the functional insulation layer; and striping the patterned polymer layer to expose the patterned insulation layer. However, the admitted prior art (Figs.1a-h) teaches the steps of providing a substrate (103); forming an insulation layer (101) on the substrate (103); forming a patterned polymer layer (109) by photolithography having the patterns on the insulation layer (101); etching the insulation layer (101) in accordance with the patterns of the patterned polymer layer (109) to create a patterned insulation layer; and stripping the patterned polymer layer (109) to expose the patterned insulation layer (page 1, line 10 – page 3, line 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the patterned polymer layer as taught in the prior art to pattern the functional insulation layer in the selective deposition process of Calvert et al., since this process involves conventional processes in the formation of patterns using photolithography (page 1, lines 16 – 17).

The combined teachings of Calvert et al. and the prior art fail to teach wherein the patterned polymer layer comprises a polyimide. However, Nagura (Figs.1B-1F) in a related patterning process teaches forming a patterned polymer layer (4a) over a silicon oxide layer (3), wherein said polymer layer comprises a polyimide (column 4, line 59 – 61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the polyimide layer as taught by Nagura to etch the

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functional layer of Calvert et al. and the prior art, since this would provide appropriate etching of the exposed areas of the functional layer (column 4, lines 56 – 67).

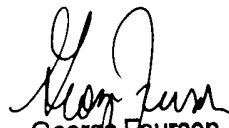
Conclusion

9. Papers related to this application may be submitted directly to Art Unit 2823 by facsimile transmission. Papers should be faxed to Art Unit 2823 via the Art Unit 2823 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2823 Fax Center number is **(703) 305-3432**. The Art Unit 2823 Fax Center is to be used only for papers related to Art Unit 2823 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Julio J. Maldonado** at **(703) 306-0098** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via julio.maldonado@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 308-0956**.


JMR
6/2/03


George Fourson
Primary Examiner